

Claims

What is claimed is:

1. A method of treating allergic disease comprising administering a natriuretic hormone peptide (NHP), or a nucleic acid sequence encoding NHP and an operably-linked promoter sequence, to a patient in need thereof.
2. The method of claim 1, wherein said administering comprises administering the NHP to the patient, and wherein the NHP comprises an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:5 and SEQ ID NO:6, or a biologically active fragment or homolog of any of the foregoing.
3. The method of claim 1, wherein said administering comprises administering the nucleic acid sequence encoding NHP to the patient, and wherein the NHP comprises an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5 and SEQ ID NO:6, or a biologically active fragment or homolog of any of the foregoing.
4. The method of claim 1, wherein said administering is by a route selected from the group consisting of oral, intramuscular, parenteral, intravenous, and intranasal.
5. The method of claim 1, wherein the NHP or the nucleic acid sequence is administered with a pharmaceutically acceptable carrier.
6. The method of claim 1, wherein said administering comprises administering the nucleic acid sequence to the patient, and wherein the nucleic acid sequence is contained within an expression vector.
7. The method of claim 5, wherein the expression vector is a DNA plasmid or virus.

8. The method of claim 1, wherein said administering comprises administering the nucleic acid sequence to the patient, and wherein the nucleic acid sequence is administered with chitosan.

9. The method of claim 1, wherein the NHP or nucleic acid sequence causes a bronchodilatory effect in the patient.

10. The method of claim 1, wherein the NHP or nucleic acid sequence inhibits airway reactivity, airway inflammation, or airway remodeling in the patient.

11. The method of claim 1, wherein the patient is human.

12. The method of claim 1, wherein the patient is suffering from asthma.

13. A pharmaceutical composition comprising a natriuretic hormone peptide (NHP); or a nucleic acid sequence encoding NHP, and an operably linked promoter sequence; and a pharmaceutically acceptable carrier.

14. The pharmaceutical composition of claim 13, wherein said composition comprises said NHP, and wherein said NHP comprises an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:5 and SEQ ID NO:6, or a biologically active fragment or homolog of any of the foregoing.

15. The pharmaceutical composition of claim 13, wherein said composition comprises said nucleic acid sequence encoding NHP and said operably linked promoter sequence, and wherein said NHP comprises an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5 and SEQ ID NO:6, or a biologically active fragment or homolog of any of the foregoing.

16. The pharmaceutical composition of claim 13, wherein said composition comprises an expression vector containing said nucleic acid sequence and said operably linked promoter sequence.

17. The pharmaceutical composition of claim 16, wherein said expression vector is a DNA plasmid or virus.

18. The pharmaceutical composition of claim 13, wherein said composition is an inhalant.

19. The pharmaceutical composition of claim 13, wherein said composition is an intranasal spray, drops, gels, or powder.

20. An expression vector comprising a nucleic acid sequence encoding a natriuretic hormone peptide (NHP) and an operably linked promoter sequence.

21. The expression vector of claim 20, wherein said NHP comprises an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5 and SEQ ID NO:6, or a biologically active fragment or homolog of any of the foregoing.

22. The expression vector of claim 20, wherein said expression vector is a DNA plasmid or virus.

23. An isolated cell genetically modified with a nucleic acid sequence encoding a natriuretic hormone peptide (NHP) and an operably linked promoter.

24. The isolated cell of claim 23, wherein said NHP comprises an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5 and SEQ ID NO:6, or a biologically active fragment or homolog of any of the foregoing.

25. An isolated nucleic acid sequence encoding an amino acid sequence consisting essentially of SEQ ID NO:5 or SEQ ID NO:6, or encoding a biologically active fragment or homolog of SEQ ID NO:5 or SEQ ID NO:6.

26. An isolated peptide comprising an amino acid sequence consisting essentially of SEQ ID NO:5 or SEQ ID NO:6, or a biologically active fragment or homolog of SEQ ID NO:5 or SEQ ID NO:6.